GETTING GLOBAL MONETARY POLICY ON TRACK

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Introduction: Getting Global Monetary Policy on Track

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Welcome to the latest edition of the Hoover Institution's Monetary Policy Conference series, which now goes way back. Our theme for 2024 is Getting Global Monetary Policy on Track, and it follows up on the themes of the previous two years, How to Get Back on Track (2023) and How Monetary Policy Got Behind the Curve (2022). This year we include sections on how to get back on track, and stay on track, from experiences in different parts of the world, and thereby how to reduce the inflation rate without slowing down economic growth. This year the key policy issues are largely international, with special discussions on Europe and Asia. The conference builds on previous Hoover monetary policy conferences going back many years—you can read about our fifteen-year milestone for the Economic Policy Working Group in the references to this paper.

Our session topics this year are wide-ranging: opening remarks by Condoleezza Rice; Europe; global and emerging markets; financial regulation and monetary policy; micro (not macro), with Hester Peirce; employment dynamics, labor markets, the Phillips curve and inflation; the next strategy reviews; a policy panel with Amir Yaron, Austan Goolsbee, and John Williams; and concluding remarks by Edward Nelson, entitled "Milton Friedman and the Second Wave of the Great Inflation, 1976–1980."

Recent History

Starting in the year 2017, the Federal Open Market Committee (FOMC) of the Federal Reserve Board began to move to a more rules-based monetary policy that had worked well in the United States in the 1980s, 1990s, and other years. Many papers written at the Federal Reserve and elsewhere showed the benefits of rules-based policies. In July 2017, when Janet Yellen was chair of the Federal Reserve Board, the Fed began to include a section on rules-based monetary policy in its Monetary Policy Report.

Many monetary policy experts made favorable comments about the rules-based policy, and central bankers were supportive. To emphasize this, one need only quote Jerome Powell, who followed Janet Yellen as chair of the Federal Reserve Board and said: "I find these rule prescriptions useful" (Powell 2018). The evidence was that the move toward rules-based policy was beneficial to monetary policy, and economic performance improved.

This move toward monetary policy rules was stopped, however, when the COVID-19 pandemic hit in 2020. Rules were removed from the Fed's Monetary Policy Report in July 2020. But by February 2021, they were reintroduced. However, rules were taken out again in the February 25, 2022, version of the report. But Chair Powell said on March 3 that rules would be back in the Monetary Policy Report.

In the report released on June 17, 2022, policy rules were back in, as Chair Powell had announced, including the Taylor rule, which was again first on the list. This approach has continued. As stated in the Monetary Policy Report released on Friday, March 3, 2023, "Throughout 2021 and 2022, the target range for the federal funds rate was below the prescriptions of most of the simple rules, though that gap has narrowed considerably as the FOMC has expeditiously tightened the stance of monetary policy and inflation has begun to moderate" (Board of Governors 2023, 43). Table 1.1 shows the rules

TABLE 1.1. Monetary policy rules as reported in the Federal Reserve Report, March 3, 2023.

A. Monetary policy rules

Taylor (1993) rule	$R_t^{T93} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + (u_t^{LR} - u_t)$
Balanced-approach rule	$R_t^{BA} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + 2(u_t^{LR} - u_t)$
Balanced-approach (shortfalls) rule	$R_t^{BAS} = r_t^{LR} + \pi_t + 0.5(\pi_t - \pi^{LR}) + 2min\{(u_t^{LR} - u_t), 0\}$
Adjusted Taylor (1993) rule	$R_t^{T93adj} = max\{R_t^{T93} - Z_t, \text{ELB}\}$
First difference rule	$R_t^{FD} = R_{t-1} + 0.5(\pi_t - \pi^{LR}) + (u_t^{LR} - u_t) - (u_{t-4}^{LR} - u_{t-4})$

Notes: $R_t^{T93}, R_t^{BA}, R_t^{BAS}, R_t^{T93adj}$, and R_t^{FD} represent the values of the nominal federal funds rate prescribed by the Taylor (1993), balanced-approach, balanced-approach (shortfalls), adjusted Taylor (1993), and first difference rules, respectively.

R_{t-1} denotes the midpoint of the target range for the federal funds rate for quarter $t-1$, u_t is the unemployment rate in quarter t, and r_t^{LR} is the level of the neutral real federal funds rate in the longer run that is expected to be consistent with sustaining maximum employment and inflation at the FOMC's 2 percent longer-run objective, represented by π^{LR}. π_t denotes the realized four-quarter price inflation for quarter t. In addition, u_t^{LR} is the rate of unemployment expected in the longer run. Z_t is the cumulative sum of past deviations of the federal funds rate from the prescriptions of the Taylor (1993) rule when that rule prescribes setting the federal funds rate below an effective lower bound of 12.5 basis points.

The Taylor (1993) rule and other policy rules generally respond to the deviation of real output from its full capacity level. In these equations, the output gap has been replaced with the gap between the rate of unemployment in the longer run and its actual level (using a relationship known as Okun's law) to represent the rules in terms of the unemployment rate. The rules are implemented as responding to core PCE inflation rather than to headline PCE inflation because current and near-term core inflation rates tend to outperform headline inflation rates as predictors of the medium-term behavior of headline inflation.

Source: Board of Governors of the Federal Reserve System.

included in the March 3 report. The notation is given in the footnote to table 1.1. The symbol r is the interest rate, π is the inflation rate, u is the unemployment rate, and the superscript LR means the long run. The results are similar to what one finds by looking at the Taylor rule (1993), which is listed first. The results can be compared by looking at the average gap in percentage points between the FOMC interest rate and the settings of the other rules.

Against this backdrop, the simple monetary policy rules considered in this discussion have called for elevated levels of the federal funds rate over 2021, 2022, and the first half of 2023, but the rates prescribed by these rules have now declined to values close to the

current target range for the federal funds rate at 5.25% to 5.5%. In support of its goals of maximum employment and inflation at the rate of 2% over the longer run, the FOMC has maintained the federal funds rate at 5.25% to 5.5% since July while continuing to reduce its holdings of Treasury securities and agency debt and agency mortgage-backed securities.

To this we must add some recent commentary from John Williams (2023), president of the Federal Reserve Bank of New York. As Williams explained:

> And so I'll start with one development that I think in important ways connects a number of changes, and that is the birth of the famous Taylor rule in 1993 when John Taylor wrote his paper "Discretion versus Policy Rules in Practice." Of course, that was an outgrowth of a lot of years of research, including by Fed economists, about thinking about monetary policy rules and strategies.
>
> But, to me, that paper galvanized in many ways how people were starting to think about monetary policy differently. Specifically, instead of approaching monetary policy as a one-time tactical decision as to whether rates should be a little higher or lower or stay the same, the Taylor rule identified or laid out an overall strategy for setting interest rates in any circumstances in terms of a reaction function. And it spawned research on a vast collection of monetary policy rules and optimal control policies—much of that research was developed here and throughout the Fed's system. And the Taylor rule transformed policy research. The idea was simple. It had been around for a while, but I think it transformed it because it changed the language of talking about monetary policy.
>
> We moved away from thinking about impulse response functions to thinking about longer-term issues. That includes what are effective monetary policy strategies; trade-offs between our policy goals; the effects of the zero lower bound, as was discussed earlier; and, of course, the roles of the various star variables—the inflation target,

potential output, the neutral interest rate or r^*—that all appear in any policy role.

And so the Taylor rule not only altered the way monetary policy is conceptualized, it also changed the way a lot of the research in R&S, and other research divisions, approached questions related to the economic outlook and thinking about policy alternatives. Now, the Fed, the wheels of change may sometimes turn slowly, but I think the Taylor rule helped get those wheels spinning.

Getting Back on Track

It is good that rules were in the Fed's Monetary Policy Report, and it is good that they might continue in future ones. It would be more helpful if the Fed incorporated some of these rules or strategy ideas into its actual decisions. Apparently, this has recently begun to happen, as I show below by comparing the interest rate path and policy rules for the interest rate. But at first only small changes were seen in actual monetary policy. So, a gap existed between rules-based policy and policy actions. This was the case at the Fed and at other central banks. Thus, we were still living in a high-inflation era unless monetary policy actions were taken.

Figure 1.1 shows the effective federal funds rate from late 2021 through the present. While the gap between the rules and the effective funds rate has narrowed, it still exists, as is shown in figure 1.4, which shows the federal funds rate as reported and tabulated by the Federal Reserve Bank of St. Louis. To see this, I show in figure 1.2 the Taylor rule as it originally appeared thirty years ago in Taylor (1993). The variables are defined below the equation. As shown in figure 1.2, the percentage deviation of real GDP from its potential is closely related to the deviation of the unemployment rate from the natural rate.

Now let us use the equations to see when and by how much the Fed was and is now behind the curve. Using this policy rule, we can

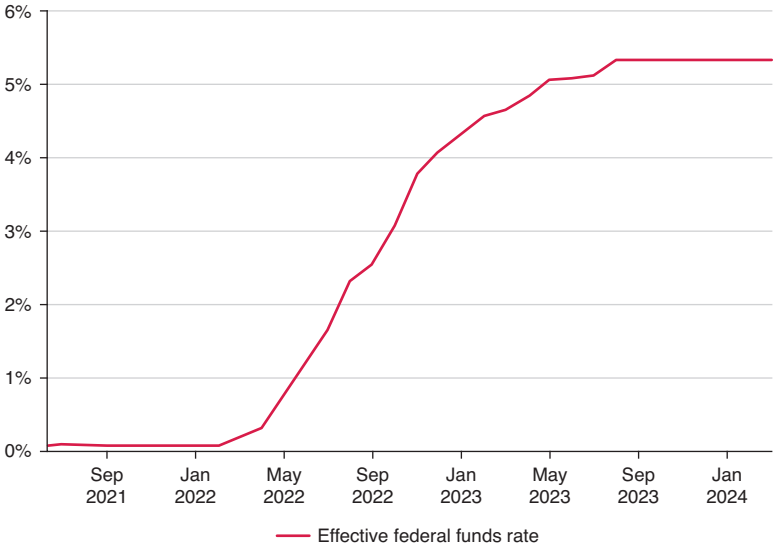

FIGURE 1.1. The effective federal funds rate.
Source: Federal Reserve Bank of St. Louis via FRED.

$r = p + 0.5y + 0.5(p - 2) + 2$

$r = 1.5p + 0.5y + 1$

where
r is the federal funds rate
p is the inflation rate
y is the real GDP gap

FIGURE 1.2. A simple version of the Taylor rule: if inflation is 2 ($p = 2$) and the GDP gap is 0 ($y = 0$), then the interest rate is 4 ($r = 4$).
Source: Taylor (1993).

see that if the inflation rate is 2% and the target for the interest rate is 2%, then the interest rate should be 4%. That is $2 + 2 = 4$. If the equilibrium interest rate is 1%, then the funds rate should be 3%.

During much of 2022 the actual rate shown in figure 1.1 was thus well behind the curve. If the inflation rate rises to 3%, then

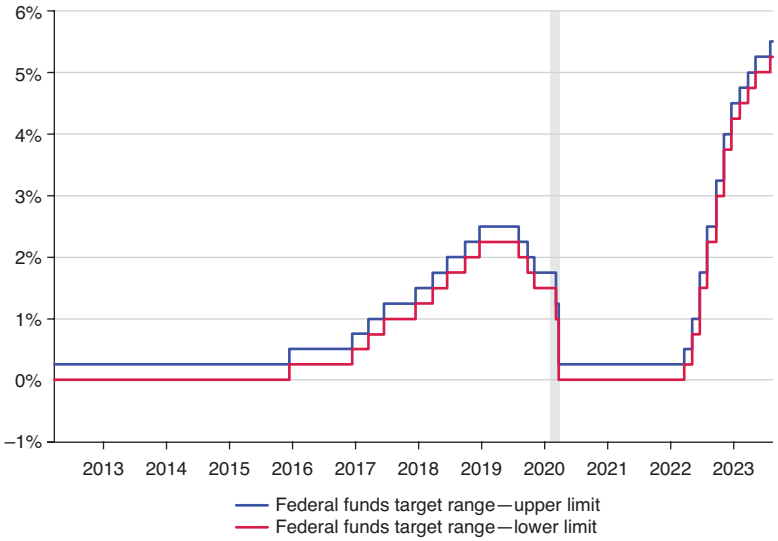

FIGURE 1.3. The Fed held the interest rate lower than the Taylor rule, and inflation rose sharply as the Fed then tightened policy.
Source: Board of Governors of the Federal Reserve System via FRED.

the funds rate should be 4.5% (1 + 3 + .5(3 − 2) = 4.5), which is a bit below where it is now. If the inflation rate is 4%, then the funds rate should be 6% (1 + 4 + .5(4 − 2)).

Thus, if we use the Taylor rule in the most recent Monetary Policy Report and plug in an inflation rate over the past four quarters of 4%, a target inflation rate of 2%, an equilibrium interest rate of 1%, and the gap between real GDP and its potential level of 0%, then you get a federal funds rate of 6%. This is within a half percentage point of where the Federal Reserve is, as shown in figure 1.3. So even with these inflation numbers, the Fed is still a bit behind the curve, though as Chair Powell indicated, the Fed may still be catching up. Note that these calculations assume that the equilibrium interest rate is 1%.

It is important to note that the situation shown in figure 1.3 was well known. Figure 1.4 was produced by James Bullard at the Federal Reserve Bank of St. Louis. It shows the actual policy rate

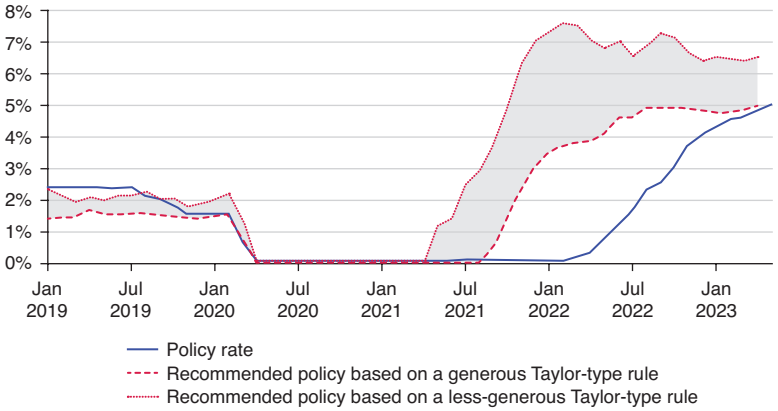

FIGURE 1.4. This chart produced by James Bullard shows that policy was too low, and this was the reason that inflation rose.
Source: James Bullard, Federal Reserve Bank of St. Louis.

of the Fed and the suggestions of policy rules. Clearly, monetary policy was not sufficiently restrictive. Bullard compares actual policy to both a general policy rule and a less-generous policy rule and finds that the situation is much the same.

What about evidence that the inflation rate was rising? Figure 1.5 shows that the actual inflation rate rose substantially and would have required a more immediate policy response. To be sure, as shown in figure 1.6, there was a lot of turbulence in the economic data as unemployment rose rapidly before coming back to normal levels.

Conclusion

These remarks have shown that the Fed got behind the curve on rules-based monetary policy in the United States and has outlined a method to get back. A review of the years leading up to the present monetary situation provides the background needed for analyzing current and future monetary policy decisions. Using actual data from around the world also points to high inflation data from

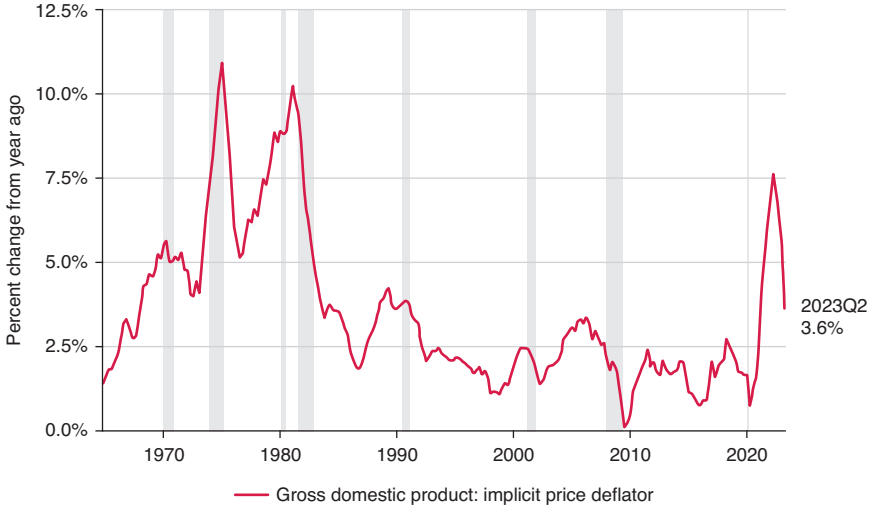

FIGURE 1.5. The inflation rate rose well above the Fed's target of 4%.
Source: US Bureau of Economic Analysis via FRED.

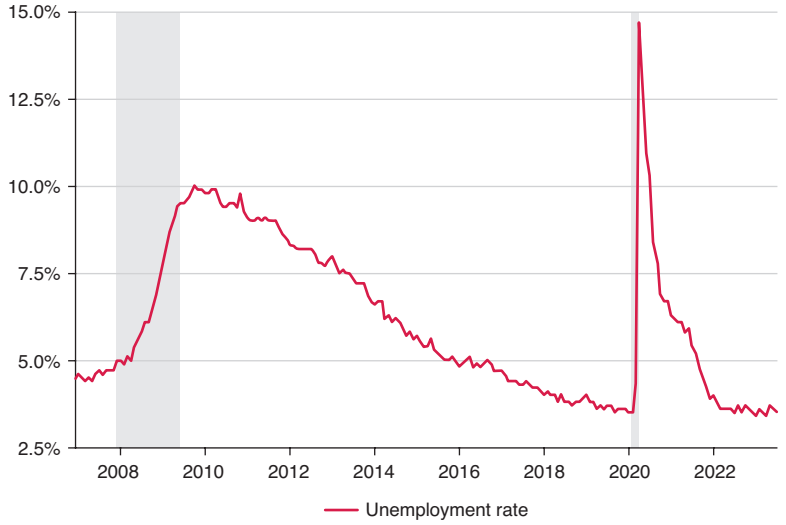

FIGURE 1.6. The unemployment rate rose well above the target range.
Source: US Bureau of Labor Statistics via FRED.

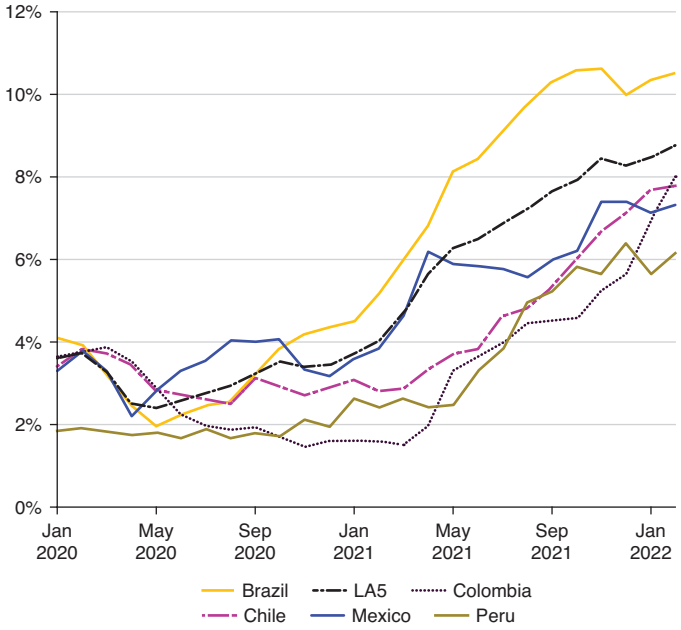

FIGURE 1.7. Inflation in Latin America from January 2020 to January 2022.

Note: Peru refers to Lima.

Source: Data from Haver Analytics; national authorities; and IMF staff calculations. Graph reproduced from Maximiliano Appendino, Ilan Goldfajn, and Samuel Pienknagura, "Latin America Hit by One Inflationary Shock on Top of Another," IMF News, April 15, 2022, https://www.imf.org/en/News/Articles/2022/04/15/cf-latin-america-hit-by-one-inflationary-shock-on-top-of-another.

other regions, with a special emphasis on neighboring countries in South America. As shown in figure 1.7, countries in Latin America such as Brazil, Colombia, Chile, Mexico, and Peru have seen high inflation. The same is true for many other regions of the world. Inflation has become a global issue.

The answer to the key question "Are we entering a new era of high inflation?" is clearly yes, unless monetary policymakers continue to adjust policy. There are now more reasons than ever for central banks to use a more rules-based policy. Central banks should start now to use rules that markets understand. The policy interest

rate would increase as inflation rises, as has already happened. It would of course be a contingency plan, as are all rules. This would greatly reduce the chances of a large, damaging change later.

References

Board of Governors of the Federal Reserve System (Board of Governors). 2023. Monetary Policy Report. March 3, 43.

Powell, Jerome H. 2018. Semiannual Monetary Policy Report to the Congress before the Committee on Financial Services, US House of Representatives. Washington, DC, February 27.

Taylor, John B. 1993. "Discretion versus Policy Rules in Practice." *Carnegie-Rochester Conference Series on Public Policy* 39 (December): 195–214.

Williams, John C. 2023. "Transcript of Research & Statistics Centennial Conference: Keynote Speech." November 8. © 2023 Federal Reserve Bank of New York. Content from the New York Fed subject to the Terms of Use at newyorkfed.org.